EQUIST Analyst User Guide
User Guide

EQUIST:
EQUITABLE IMPACT SENSITIVE TOOL

User Guide: Analyst

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1 Introduction to EQUIST

The 2030 Agenda for Development envisages a world free of poverty, hunger, disease and want, where all life can thrive and a world free of fear and violence. Further, leaders have committed to a world with equitable and universal access to health care and social protection, where physical, mental and social well-being are assured.

As a part of such a vision, we envisage a world of universal respect for human rights and human dignity, the rule of law, justice, equality and non-discrimination; of respect for race, ethnicity and cultural diversity; and of equal opportunity permitting the full realization of human potential and contributing to shared prosperity. A world which invests in its children and in which every child grows up free from violence and exploitation. A world in which every woman and girl enjoys full gender equality and all legal, social and economic barriers to their empowerment have been removed. A just, equitable, tolerant, open and socially inclusive world in which the needs of the most vulnerable are met.

Among them the Goal 3 (SDG3) focuses specifically on ensuring healthy lives and promoting well-being for all at all ages. Target 3.8 of SDG 3 – achieving universal health coverage (UHC), including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all – is the key to attaining the entire goal as well as the health-related targets of other SDGs. Achieving the goals requires all national and sub-national policies, plans, strategies and budgets to be reviewed. Since the SDGs aim to “leave no one behind”, indicators should be disaggregated by income, sex, age, race, ethnicity, disability, location and migratory status, wherever data allow.

National and sub-national governments need to review their plans NOW, more than ever to assure its population that they are on-track for achieving sustainable outcomes for everyone. Plans that may not be based on a thorough assessment of how the health system is functioning, particularly with regards to producing equitable results for various sub-populations will require to be revised or refined. A country can have several plans at once, each covering separate programmes, with no clear framework guiding how they fit together and how they jointly contribute to the overall health system. Furthermore, health plans often resemble “wish lists” with too many objectives and activities to achieve with realistic expectations about human and financial resources. Finally, sub-national governments sometimes struggle to adapt or customize national policies and plans to their particular context, and then to implement them effectively.

These challenges are the main contributors to the “implementation gap,” or the difference between what policy makers plan to do and what target populations actually experience. The implementation gap tends to be particularly severe in disadvantaged and hard-to-reach areas and contribute to health inequities, which have improved slightly in many countries over the past decade, but far too slowly (Victora et al 2012). The implementation gap, coupled with the growing demands for accountability for domestic and foreign resources, have led development partners and civil society to demand greater rigor and transparency in planning processes, and more objective and detailed monitoring and evaluation practices.

In response to these challenges, donors and researchers have produced numerous manuals, guidelines and tools to support improved planning, implementation and
monitoring. In the early 2000s, UNICEF and the World Bank developed a tool called “Marginal Budgeting for Bottlenecks,” which was the first tool that allowed users to systematically assess deficiencies in the overall health system, develop strategies to overcome these deficiencies, and then project the additional or marginal costs and impacts of alternative scenarios. The MBB was applied in dozens of countries around the world and led to enhanced prioritization of maternal, new-born and child health and nutrition programmes under a holistic “health system strengthening” approach. The MBB, however, faces certain challenges such as its substantial data requirements, complicated interface, and lack of a systematic approach to analyse and address health inequities. The Johns Hopkins Bloomberg School of Public Health simultaneously developed the Lives Saved Tool (LiST), which allows users to project the impacts of changes in coverage of health and nutrition interventions on child mortality using rigorous data and validated assumptions; this tool has quickly become one of the more popular and trusted resources for projecting the impacts associated with changed coverage of MNCH interventions. Recently, the tool has been updated to include a Nutrition module that estimates number of stunting among children averted.

In 2012, WHO and the UN Inter-Agency Working Group on Costing (IAWG-Costing) developed the OneHealth tool, which attempts to link strategic objectives and targets of disease control and prevention programmes to specific investments in health systems. The tool provides planners with a single framework for scenario analysis, costing, health impact analysis, budgeting and financing of strategies for all major diseases and health system components.

Chile had developed in 2008-2010 a national strategy for health equity. World Health Organization commissioned the Chilean consultants to conceptualise and develop a stepwise review process, and also draw on the experiences of the Ministry of Health, Social Services and Equality of Spain that conducted a training process to review programmes at national and sub-national levels in 2010 and 2011 based on the Chilean experience. This resulted in a stepwise review process ‘Innov8’ for reorienting national health programmes to better address equity, social determinants, gender and human rights. The guidance tool and the associated training is now spearheaded by WHO in many regions for supporting national and sub-national health authorities to systematically review their programmes to be more equitable.
The **EQUitable Impact Sensitive Tool (EQUIST)** was developed in 2016, as a strategic planning, modelling, prioritising and monitoring platform that links other tools: for example marrying the Tanahashi framework in the MBB with LiST's impact projection function through a substantially easier and more visual user-friendly interface. The tool was designed to help governments, donors and public health specialists from academia as well as the global health community to think about issues of equity in maternal, newborn and child health and nutrition in a more systematic and evidence-based way, and to design health strategies that will lead to stronger, more resilient health systems. Application of EQUIST at sub-national or national levels can serve as a solid background or follow-up analysis to prioritise strategies and interventions that will leave no one behind on the one hand and lead to health systems strengthening at levels where it counts to achieve universal health coverage as an intermediate step to countries achieving Sustainable Development Goal 3 on ensuring healthy lives and promoting well-being for all at all ages.

EQUIST was conceived and designed by health specialists working at the United Nations Children’s Fund (UNICEF). It has been developed and maintained by Community Systems Foundation (DevInfo). The Bill and Melinda Gates Foundation provided funding. EQUIST is linked to the Lives Saved Tool (LiST), developed by the Johns Hopkins Bloomberg School of Public Health, estimate cost using World Bank costing module organized around the Tanahashi framework in the Marginal Budgeting for Bottlenecks tool (MBB), and uses data on indicators that are globally and publically available (MICS, DHS). For conducting a detailed analysis at country and sub-national levels, it is desirable to add recent and most uptodate data on major indicators from robust, valid and reliable sources.

**What is EQUIST?**

**EQUIST is a medium-term analysis and strategic prioritising and planning tool to address child and maternal health and nutrition inequities in developing and middle-income countries.** It helps decision makers identify which populations are disadvantaged, why they are disadvantaged, and which combination of evidence based high impact interventions and health system strengthening strategies would be needed to leave no one behind and produce universal health coverage for achieving sustainable results. Through these means EQUIST is a tool meant for maximizing the number of lives saved.
and averting stunting among under-five children; decreasing health disparities and improving overall cost effectiveness. EQUIST’s unifying factors are based on its linking “progress” to improvements in equity within a country as well as its ability to link specific constraints in terms of health system barriers and bottlenecks, and strategies for overcoming these barriers and bottlenecks, to changes in mortality, morbidity, and malnutrition.

**EQUIST can be used for national and sub-national health planning and prioritising exercises.** In this context, EQUIST will help analysts and planners address issues of equity specifically in the areas of maternal, new-born and child health and nutrition. It will also provide cost effective options to do so. **It is important to understand that EQUIST implicitly recognises that various components of health system are not uniform within a country and would require differential approaches that are context specific; equity in these contexts means that a system is developed fully to deliver similar results in terms of coverage and impact for all populations.** Achieving the goal of equal impact may require different setups, system organization, and programmatic emphases in different parts of a country or for different target populations (Carrera et al 2012).

For this reason, the tool helps users to conduct an in-depth analysis of the situation of the disadvantaged populations in a country, while the effective coverage achieved by better-off populations are used as benchmarks for coverage of the most disadvantaged. Beyond this visualization of coverage levels among the least disadvantaged, users of EQUIST are directed to focus explicitly on epidemiological issues affecting various disadvantaged populations in their countries individually.

**Who is EQUIST designed for?**

EQUIST was designed to be used by public health specialists from different stakeholders including government at national and sub-national levels, academia, donors, multilateral agencies, private sector, civil society and health workers themselves. Initially, it is best to conduct national level analysis involving experts drawn from different fields. These national experts, or country customizers, may comprise of **MOH officials, international development partners and key stakeholders from the private sector, NGOs and academic institutions.** The result of their work is a clear vision of equity patterns nation-wide, and provides a preliminary understanding and visualization of the causes of these patterns. The national analysis and customization process needs to be repeated every few years as new data become available. Before the tool can be used at sub-national levels, a team of national experts and those with very good knowledge of data, their sources and relevance need to adjust the tool and customise the tool for sub-national analysis.

Once the tool has been customized for a given country, it can be used by an unlimited number of individuals or institutions with interest in a country. These users could be **national or sub-national planners, programme managers, prospective partners, members of civil society, researchers, or public health practitioners and medical students.** They could be interested either in maternal and child health generally in a specific level of the health system (such as hospitals, primary care or community health services), in a particular programme (such as reproductive health, maternal and child health, adolescent health, Nutrition, HIV/AIDS or immunization), or in a particular region or sub-population (such as the residents of a certain province or wealth quintile).
What to expect when using EQUIST

It is important to note that the EQUIST tool works in a step-wise fashion. This means that as data is selected in a module, it will have an impact on the data and analysis in subsequent modules. To be able to properly use EQUIST, users will need to be familiar with the terms and concepts used in the module(s). *A glossary of these terms is available in Annex I.*

EQUIST must be set up and customized for a country before it can be used (see above). This customization process needs to happen at least once every 3-5 years, if EQUIST is used only once for a five year strategic planning process. If on the other hand, EQUIST is used for annual planning processes to further refine priorities and strategies, data in EQUIST will need to be updated more frequently. The more carefully it is customized, the more precise and valid the results will be. The customization process must be performed by a well-trained and supported team of experts with a good Monitoring & Evaluation background as well as familiarity with various data sources in a given country, and the process should be well documented.

EQUIST comes pre-loaded with globally-accepted data that is publically available. The EQUIST technical assistance team sources such data and regularly updates resources available for all countries in the system. EQUIST’s primary data sources are the Demographic and Health Surveys (DHS), Multiple Indicator Cluster Surveys (MICS) and estimates of mortality rates and causes developed by the Child Health Reference Group (CHERG) and the Inter-agency Group for Child Mortality Estimation (IGME.) Users at country level may wish to update data on key indicators using sources such as Service Provision Assessment (SPA), Facility based surveys, Service Availability and Readiness Assessment (SARA), National Nutrition Surveys etc. For some indicators, where experts at country level confirm that district level information systems provide reasonably reliable estimates, data may also be drawn from district health information systems (DHIS2/HMIS).

When using EQUIST, one will perform the following two major sequence of steps.

**A. Look at situational analysis of a country**

   a. Profile: Conduct brief analysis to assess the general extent, nature and implications of inequities in the country. Examine the key drivers of inequity (the underlying factors that explain inequities (wealth quintile, geography, ethnicity and geographic location) and analyse the scale of inequity (is deprivation mostly concentrated in poorest quintiles, in rural areas, or in some regions?)

   b. Frontier: Conduct an analysis to identify which factors are most likely to contribute to increasing inequities, and compare the number of child deaths and malnutrition cases that could be averted by sub-populations viz, wealth quintile, geography, and location.

**B. Build a scenario analysis of a country:** Build multiple scenario(s) within a particular country by choosing different sets of target population, by identifying different epidemiological priorities (based on programme priorities), intervention packages, barriers and bottlenecks associated with them, the root causes of the bottlenecks or barriers and the strategies to overcome them; and from this a LiST analysis will
generate the impact(s) of the analyses and compute the additional costs and lives saved

What is the theory of change behind EQUIST?

EQUIST’s step-wise approach is based on the following theory of change.

1. **Define priority populations** through a careful situation analysis considering the country’s demographics, health and nutrition outcomes and the coverage of essential interventions; the priority populations may be identified by sex, age groups, sub-national geographical entities such as province or district or municipality, by wealth quintiles, by place of residence such as urban, rural or urban poor residing in urban slums.

2. **Prioritise health issues** that are prevailing in a country and most specifically among the identified targeted population, to assess severity, scale and scope of their deprivation; these may be specific diseases or complications that may be responsible for the mortality, morbidity or health problem in the population that has been defined in Step 1 above.

3. **Prioritise interventions packages** in one of the three delivery platforms that will specifically address the identified disease(s), health and nutrition issues of the target population; [EQUIST has three delivery platforms: a. Family care practices, b. Preventive services and c. Curative services and the ‘high impact interventions’ are organised by these three platforms] 

4. **Prioritise health system barriers and bottlenecks** of the selected intervention packages in the three delivery platforms and aggravating inequities between the least and most disadvantaged; set up the realistic and feasible frontiers that can be reached by overcoming the identified barriers and bottlenecks and thus aim to reducing inequities; based on the severity of the system barriers and bottlenecks and the feasibility of the programme identify those that can be further analysed in the next step.

5. **Identify and prioritise the causes of the barriers and bottlenecks** resulting in inequity between the least and most disadvantaged, that the stakeholders agree must be tackled as part of the plan. The root causes will emerge by asking the question ‘Why’ sequentially, up to 5 times.

6. **Select strategies to address the root causes of the barriers and bottlenecks** and model a scenario to reduce inequity between the various groups. EQUIST allows the user to select strategies that are oriented to strengthen health system barriers and bottlenecks and will also allow users to identify entirely new strategy that may be context specific and unique to the country or sub-national population.

7. **Assess expected impacts and cost-effectiveness of the strategies**, especially in terms of reducing the inequity between the least and most disadvantaged
1. Define priority/target populations

2. Prioritise Epidemiological priorities

3. Prioritize Interventions

4. Prioritize key bottlenecks

5. Prioritise key causes of bottlenecks

6. Select strategies to address cause of bottleneck

7. Asses expected impact and cost-effectiveness
2 EQUIST Home page and Navigation

The EQUIST website is available via this link: http://equist.info/. EQUIST website works well with the latest version of Chrome, Firefox, Internet explorer and Safari, however Chrome and Firefox are the preferred option.

The first screen one will see is the homepage:

Scroll down the page to see a summary of statistics related to EQUIST and background information to learn why the tool was developed.

2.1 SELECTING THE LANGUAGE

The EQUIST website is a multi-lingual site and its content can be seen in one of the three UN languages (French, Spanish and English). The dropdown menu at the top right of the screen enables the user to toggle between languages and the user can select the language option for her/his use:
2.2 Anonymous User: No Login

To access the main dashboard, click on the menu icon on the upper right-hand corner.

User does not need to be formally logged in to access dashboard.

Without logging in, one will be able to enter the dashboard to review only the first set of steps related to the situational analysis of all the countries. Click on “Dashboard” in the main menu.

It will redirect to a page and the following screen shall appear. User will have to select the country by clicking on the arrow next to the country and scrolling to identify the country they are interested in:
We have chosen Tanzania for this illustration. On the left is a panel which will allow users to go from top to bottom in a stepwise fashion to conduct Situational Analysis based on data from the identified source. The user can perform a situational analysis by applying selections from left panel. First selection will be of dataset (for which year one wants to conduct the whole situational analysis). Once can choose more than one dataset in case a trend analysis is being attempted.

Situational analysis is further subdivided in two “sub-modules” – Profile and Frontiers; The ‘Profile’ module helps a general analysis of the profile of the country, demography and epidemiology, causes of death and types of malnutrition prevailing in the country. This can be done by regions (province/district), by wealth quintiles or by area of residence (urban/rural). Next, these data can be visualised either as rates or by numbers. The module then focuses on a more detailed examination of inequities/excess mortality.

Options relevant for maps and charts are available on the upper right corner. For maps there are four options, while for charts there are five options:

Maps

Charts

The use of each icon is described below.

Map Settings

First option of set map settings only will be seen for map. On clicking set map settings following view will open:
Based on the selected country, list of available **feature maps** shall be displayed. On selecting these feature maps they shall be overlaid on the background thematic map.

In the above map, the red coloured section shows ‘Tanzania villages’ and the map below overlays the available ‘Tanzania roads’.

**Multiple feature maps can be overlaid at the same time.**
Bubble overlay feature allows superimposing another indicator (supplementary indicator) as bubbles over a base thematic map based on an initial selection of indicator.

Default color of map theme can be altered through color which includes start color and end color of map. A gradient theme of selected start color and end color is applied over thematic map. User specific preference when set initially is used as the 'default option' by the application for users who log in. Clicking the reset icon resumes the default color.
One of the important elements for the user in the Situational Analysis is the ability to zoom in on maps, and download maps and charts as excel files:

1. To zoom in on the map click the + button:

The map will enlarge:
Also, it is possible to scroll up and down using the mouse or double click on the map. It will zoom in and zoom out the map accordingly.

**Sorting**
The following two buttons for sorting are only available for charts. This would help sorting the chart data based on the legend title alphabetically or by data value either in ascending or descending order.

![Sorting buttons](image)

**National Average**
National average is shown as a yellow line for indicators with unit as rate

**Download**
This button is common for both map and chart view.
Once the U5MR data by province/district whether for maps or charts has been examined, it is possible to download the visualization by clicking on button:

It will download an excel file with the map or chart content and its data.

Download country profile chart in excel format. In EQUIST, a template has been developed to download a Excel file that has data visualisations on a number of issues as an initial aid to get participants of a meeting or workshop reviewing data and come prepared for discussions. This is exhaustive summary of mortality and nutrition data with powerful visualizations, styled along various data sheets such as the Countdown profiles or Country scorecards.

The user can also download the data either as a PDF or JPEG image. To do this, click the downward arrow in the upper right hand corner, and select from the options to save in the following formats:

- Download PNG image
- Download JPEG image
- Download PDF document
- Download SVG vector image
3 Logging In

The EQUIST website is available via the following link: http://equist.info/. To continue to login the user clicks on above mentioned url, the first screen one will see is the homepage dedicated to EQUIST.

Click on the login button which is highlighted in below image to login:

If the user is already in the ‘Dashboard’ view prior to logging in, then the screen to login would appear as follows with the login button as highlighted in below image:

A pop-up will appear allowing the user to enter her/his username and password information received via email on self-registering or account created by administrator.
If user is logging in for the first time, click on ‘Create an account’ link which will redirect to user registration page and lets user to create account with valid user id, password.

After logging in, the user will have access to the EQUIST dashboard as “analyst”.

This will be the first screen that will appear:

As a logged-in user, either of the two modules can be accessed:
1) Situational analysis
2) Scenario
4 Situational analysis

The situational analysis is the first of two sections in the EQUIST dashboard. As per the country selection and dataset selection the analyst user performs situational analysis.

The goal of this module is to provide a general overview of the extent, nature and implications of inequity in the country. It helps users to visualize the health inequities in a given country according to several different variables, including geography, wealth quintile and rural versus urban location. It also helps users to understand the causes of the inequities, in terms of health, nutrition status and diseases; to assess disparities in coverage of evidence based high impact interventions; and to have a sense of the cross-cutting health system bottlenecks that are limiting the effective coverage of the key interventions for deprived populations.

In the situation analysis it is possible to understand the following:

a) Who the most disadvantaged or vulnerable women and children are; i.e. how deprivation is affected by various drivers such as wealth, geography, and location.

b) Which health and nutrition conditions cause excess mortality, morbidity and malnutrition among the most disadvantaged populations in a country;

c) Which health and nutrition interventions are linked to this excess mortality, morbidity and malnutrition; and

d) Which health system issues are contributing to under-coverage of health and nutrition interventions?

This information supports an evidence-based prioritization of vulnerable populations and priority interventions, as well as an initial understanding of the broad health system issues that will need to be addressed in order to reduce health disparities in the country. The situation analysis can be used by itself or as a precursor to an in-depth bottleneck analysis and scenario development exercise contained in the other module - the scenario analysis.

As an analyst user logged in, the user will have the option to first choose the country for which it is intended to conduct the EQUIST analysis. To do so, click from the dropdown menu of country listings and/or type the country of interest.
The country dropdown list contains countries to choose for analysis. A list of countries and their two most recent surveys loaded in EQUIST tool, by December 2015 is available in Annex III. For the purpose of this user guide, the database of United Republic of Tanzania has been taken as an example.

Further, one can select dataset from the dataset dropdown explained above. There is provision to select multiple datasets as well.

**Health Profile**

As discussed, the user will be able to explore two types of profiles - Profile and Frontier - in situation analysis. The selection for these is available in two sections on the left-hand side of the navigation.

### 4.1 Profile

This module is expected to provide an overview of:

1. **The key driver(s) of inequity** – the underlying factors that are behind inequities for health and nutrition outcomes and for coverage of evidence based and high impact interventions—i.e. Is inequity explained mostly by geographical differences? Is it better explained by differences in wealth? Regions? Area of residence?
2. **The extent of deprivation**: If, say, wealth is identified as the main driver of inequity- Is deprivation mostly concentrated in the poorest quintile? Does it affect the 4 poorest quintiles?

The population “profile” is an interactive feature that allows users to produce bar charts, maps. The current version allows users to refer to IHME developed maps for under-five mortality, neonatal mortality and malnutrition for select countries (predominantly from those in Sub-Saharan Africa) and compare them with those that the user will develop
using the datasets in EQUIST. Users can visualise data of different demographic parameters, epidemiological parameters and theme of key packages by various stratifiers available in original data sources: it examines under-five mortality, neonatal mortality and malnutrition status of children through different variables.

Profile maps will be the outcome as a result of:
- Selection by ‘Analysis of’
- Selection by ‘Geography’
- Selection by ‘Unit’

On selecting dropdown from Analysis of, the user has options to select the indicator further sub-divided into:

1. Sector
2. Theme

1. Sector is sub-divided into:
   a) Demographic parameters
   b) Epidemiological parameters

   ![Analysis of](image)

   **a) Demographic parameters**: It is further broken down into:
   1. Population in million
   2. Proportion of women age 15-49 married
   3. Percent of women currently pregnant
   4. Crude birth rate
   5. Proportion of population under 5 years

   To view this analysis, one may choose to understand neonatal mortality in the Tanzania in 2010 by geography. To do this:
   1. Select TZA 2010 Regions as the dataset
   2. Select the analysis of Demographic parameters
   3. Within this sub-menu, select the sub-indicator of ‘Percentage of women currently pregnant’
   4. Select the last aggregate “by” regions(Mkoa)
5. Select a unit

The following output will appear:

It is also possible to view the output as a map by clicking on ‘Map’:

b) Epidemiological Parameters: Additionally, it is possible to conduct the situation analysis by “epidemiology,” which is broken down into Under-five mortality by cause, Neonatal mortality by cause, Maternal mortality by cause etc.

2. Theme: Finally, one can do the analysis by ‘Theme’, which is broken into three further categories (organized by the service platforms):
   1. Family care practices: to deliver three promotion packages – water, sanitation, hygiene practices (WASH), sleeping under insecticide treated bed nets, and neonatal and infant feeding practices
2. Preventive services: to deliver three preventive service packages, namely family planning, antenatal care, and immunization
3. Curative services: packages namely - delivery by skilled professionals, integrated management of neonatal and childhood illnesses (IMNCI), and emergency obstetric and newborn care (EMONC)

These 3 themes are further broken down into their own indicators:

1. **Family care practices**
   - WASH
   - ITNs/Environmental safety
   - Neonatal & infant care
2. **Preventive services**
   - Family planning
   - Antenatal care
   - Immunization plus
3. **Curative services**
   - Integrated Management of Neonatal & childhood illness (IMNCI)
   - Delivery by skilled professional
   - EMONC

As an example, generate visualisation of the effective WASH coverage of the population in regions in 2010. To do this:

1. Choose the dataset for 2010.
2. Select 'Theme' under 'analysis of'
3. Select 'Family care practices' as a sub-indicator under 'Theme'
4. Select ‘WASH’ under ‘family care practices’
5. Select ‘improved water source’ under ‘Wash’
6. Select Effective coverage determinant.
7. Select ‘Regions(Mkoa) under by:

The graph(s) below will appear with a definition of the indicator displayed in the title:
Continue to manipulate and play with different analyses to develop an understanding of the health & inequities context within selected country. It is possible to visualise data by different combinations and analyse the data made after calculation.

**Default Outputs**

After the selections, default analysis for the situation analysis profile can be seen in 3 visualizations:

1. Map
2. Chart
   
3. IHME Map (only applicable for Under-five mortality, Neonatal mortality and malnutrition for select countries in sub-Saharan Africa)

**4.1.1 Map**

By default, this is the first screen a user will see.
To view the exact numbers of deaths per 1,000 live births in each province, click or hover the mouse on one of the regions of the map:

It is also possible to view the absolute number of deaths in the regions by clicking on “number” under units in the left-hand navigation panel:
4.1.2 Chart
To view the mortality data as a bar chart, click on “chart”:

4.1.3 IHME Maps
The IHME Map can be seen by clicking on the IHME Map option. It is only available for the indicators: Under-five mortality IGME, Neonatal mortality and Malnutrition for select countries in sub-Saharan Africa. Link to the original IHME website is also made available under the IHME map.
4.2 Equity Frontier Analysis

The next section of the dashboard is the equity analysis. This module is intended to identify which factors contribute most to addressing inequity and reducing the disparity between the different groups analysed through the Population modules.

The generated charts do not show absolute numbers of deaths but rather amenable deaths. Amenable deaths refer to deaths among disadvantaged populations caused by the fact that these populations have lower coverage of high impact interventions than the least disadvantaged populations in the same country. Another way of understanding this is excess deaths among the poor that, in principle, could be averted by bringing the coverage of interventions among the poor to a certain predefined level. This analysis is a crucial component of EQUIST, which explicitly encourages countries to focus on reducing health disparities prior to, or at least concurrently with, efforts to move towards universal health coverage.

The first step will be to click “Frontiers” on the left-hand side menu:

One needs to follow these steps to view frontier chart.

For generating frontier chart user needs to make following five selections in above screenshot

**Inequity by:** Selection of required indicator under ‘Inequity by’ will be the first step

**Benchmark:** Either Equity or Operational benchmark can be set.

**Equity frontier**

The equity frontier that is generated indicates how many lives could have been saved or malnutrition cases averted if the country of selection were to equalize coverage values for the least disadvantaged within the most disadvantaged population.

The way that the excess deaths by quintile is calculated is: [under-five deaths in the poorest 4 wealth quintiles based on existing coverage of high impact interventions] - [under-five deaths in the poorest 4 wealth quintiles if coverage of high impact interventions were equalized]
interventions is raised to the same levels as the wealthiest quintile in the same country]. The equity frontier serves as a benchmark to what seems feasible in that particular context.

**Disaggregation by:** Continuing with process, select from ‘disaggregation by’ dropdown menu. It is possible to view the amenable deaths by: epidemiological cause and by package.

**Deprived group by:** It is possible to view the amenable deaths by wealth quintile. Please see below for a definition of how each of these exercises would be calculated:

<table>
<thead>
<tr>
<th>Excess Deaths by Variable</th>
<th>Formula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub national</td>
<td>[under-five deaths in the geographic regions with the highest under-five mortality] - [under-five deaths in those same regions if under-five mortality was reduced to the same level as in the region with the lowest under-five mortality in the country]</td>
</tr>
<tr>
<td>Urban/Rural Area of Residence</td>
<td>[under-five deaths in rural locations] - [under-five deaths in rural populations if under-five mortality was reduced to the same level as in urban populations in the country]</td>
</tr>
<tr>
<td>Epicause (Epidemiological cause)</td>
<td>[deaths in the poorest 4 wealth quintiles due to major illnesses, based on current levels of coverage of high-impact interventions] - [deaths in the poorest 4 wealth quintiles due to major illnesses, if current levels of coverage are increased to be the same as in the richest quintile]</td>
</tr>
<tr>
<td>Package</td>
<td>[deaths in the poorest 4 wealth quintiles related to the current coverage of high-impact interventions, allocated to those interventions] - [deaths in the poorest 4 wealth quintiles if coverage of interventions was increased to the levels in the wealthiest quintile, allocated to those interventions]</td>
</tr>
</tbody>
</table>

As an example, the amenable deaths for U5MR (i.e. equity frontier) in Tanzania in 2010 by residence (rural vs. urban) would appear as shown:
This graph shows that approximately 800 deaths could have been averted (excess deaths) if the coverage values for the rural (most disadvantaged) population was equivalent to that of the urban (least disadvantaged) population. Therefore, burden of deaths being heavier in rural area, strategies would be defined to specifically address the situation in rural area if it is intended for the plan or programme to be effective and generate results at large scale.

EQUIST will then automatically generate equity frontier graphs. The chart will look similar to the one given below, depending upon the country of context:

Operational coverage frontier
In UNICEF’s recent Narrowing the Gap II study, a group of over 50 countries were included and one of the key areas of analysis was the measurement of changes in supply, demand and quality of bottlenecks for these 50+ countries over a period of around 5 years. This allowed identification of the best results found among these countries in reducing each of bottlenecks analysed. This provides us with a benchmark of “good practices” that serve us as realistic benchmarks of what is feasibly within a medium-term scenario.

“Operational coverage frontiers” for the most disadvantaged quintiles is the change in effective coverage of evidence based high impact interventions (health, nutrition and WASH, HIV etc.) that is considered feasible if their bottlenecks are reduced with the same proportion as observed recently in the most disadvantaged quintiles in best-performing countries. This represents a medium-term benchmark based on “best practices” in reducing bottlenecks.

To conduct the operational frontier, select “Operational” from the “Benchmark” menu
Based on the settings for 2010, for Tanzania by regions, the model allows visualization of operational frontiers and equity frontiers in a stacked bar format disaggregated by group, disease, intervention and bottleneck. The operational frontier graph will appear as follows:

This analysis shows that the greatest number of amenable deaths (6k+) occur in the Shinyanga province of The United Republic of Tanzania. This means that if coverage levels in Shinyanga were equivalent to those of the best performing countries, approximately thousands of deaths would be averted.
5 Scenario analysis

In the scenario analysis, option exists to assess a model and compare the effectiveness and cost-effectiveness of alternative strategies (or scenarios) in terms of prioritisation of different target populations, selection of different groups of preventive and curative interventions and identification of different strategies to address bottlenecks for effective coverage of these interventions.

Scenario analysis is available only to logged in user. As explained in previous chapter, user needs to do Country selection and Dataset selection from respective dropdowns. A country may have multiple datasets, in most cases the user would prefer to build a scenario on most recent dataset.

The first screen user views when clicked on scenario from left menu

Icons on rightmost corner are:

- Add scenario
- Edit scenario
- Delete scenario
- Compare scenario
- Copy scenario
- Share scenario
- Download scenario

This is the function of each option:

Add Scenario. For continuing scenario analysis, user needs to create a Scenario. Process of making scenario is as follows:

Clicking on ‘add button’ will open a pane
Showing fields Scenario, description, Start date and End date
User can add scenario name and its description accordingly. Description field should be used to give a brief note on the focus area of the scenario. Current date is set as default start date with a gap of 5 years (default end date). One can change the selections as per need. '*' sign implies the mandatory fields which user need to enter. Filling the data in pane user can now save the data using save button or cancel if the user wants to discard the changes using these two buttons respectively.

Saving will redirect to the first step of Scenario building
To view the list of scenarios, click on ‘scenario’ in left pane this screen will appear. All the scenarios created by the logged in user for the selected country, as well as those which have been shared with the user by other users who had worked on the same country and the dataset shall be displayed.

**Edit Scenario.** User can edit the basic details of scenario by checking the box besides the name of scenario and clicking edit button. Alternatively, one can click on the row which will highlight the selected row and can edit it by clicking on edit button. Same screen as explained in ‘add scenario’ with details of the scenario selected will appear. User can change its fields like scenario name, start date etc. and then saving its changes.

**Delete Scenario.** Selecting the scenario and clicking on delete button will remove that particular scenario.

**Compare Scenario.** This is applicable in case of multiple scenarios. If user wants to compare two or more than two scenarios, he/she will select those scenarios and click on
compare button will open this pane. Remember compare scenario will work in case of those scenarios whose **impact has been generated**.

Comparing impact:

![Comparison of impact](image1)

Comparing cost:

![Comparison of cost](image2)

**Copy scenario** allows creating a duplicate instance of existing scenario. The user can alter the selections at various steps without affecting the original scenario. The following screen will appear
‘Copy of’ will be set as a prefix to the name as a default for the new scenario. One can edit the name and click on save button. Next screen will now populate the copied scenario with its name. This option is very helpful when a user wants to create multiple scenario for different geographical areas, however keeping same the other selections for interventions, causes and strategies for example. User may also want to persist selection from a previous scenario and make some adjustments in the copy of the original scenario. This allows for better comparison and evaluation of results and avoids extensive selection process every time, while building a new scenario.

Share scenario. As noted earlier, EQUIST has the provision to share scenario with other users of Equist. This feature allows users to share a scenario with colleagues or reviewer with in EQUIST. When sharing a scenario, a copy of the scenario starts showing up for the user with whom the scenario was shared. Any changes made in the copy of the scenario, will not affect the original scenario residing with owner of the scenario.
User clicks on the scenario which they want to share and clicks on share button. Following screen shall appear

![Share Scenario]

As it is a searchable field, one can type the name and it will appear. After selecting one or more users click on the share icon. For sharing any concern related to scenario with support team it can be shared with the EQUIST Admin user which helps the support team in analysing the scenario.

**Download scenario.** At any step of the scenario analysis, it is possible download a summary report of the analysis. Pressing the button will enable an automatic download of an excel file summarizing your data choices and impact charts.
5.1 EQUIST's step-wise approach
This section will cover the 7 steps in scenario analysis.

The scenario analysis works in a top-down and stepwise approach. It is possible to identify priority areas for action by following an order of 7 steps:

1. Targeted population
2. Epidemiological priorities
3. Interventions
4. Bottlenecks
5. Causes
6. Strategies
7. Impact & Cost

What the user selects for the targeted population will impact the next analysis for epidemiological priorities, which will in turn affect the interventions analysis, and so on. That is why other than targeted populations all other options are greyed out. All other steps will get enabled sequentially. It is also important to note that EQUIST will automatically display data for the scenario analysis from data that is pre-populated by the country customization team.

On saving a new scenario, system redirects the user to the first step of scenario building. The breadcrumb on the top depicts the name of the scenario > Sequence of step > Name of the step. icon will be on each step. This will open a help guide so that the user will know what each step does in brief.
5.1.1 Targeted Population

Under this step the user makes selection of target population that the scenario will be focusing on. The choice around different type of disaggregation from which the target population can be selected is dependent on the associated dataset. If the dataset associated to the scenario has data by Geography, Wealth Quintiles, Residence or other disaggregation, target population selection can be made from one of these disaggregation types. User needs to first select one of these disaggregation types. These are also called driver of inequity. To determine the driver of inequity, refer back to the equity situation analysis.

User will be able to see two tabs
- Identify driver of inequity
- Set target population

In addition to the analysis performed under the situation analysis, under this tab user can further analyze and assess the driver of inequity using the equi-plot visualization. The Analysis by option allows changing the indicator; the equi-plot will refresh to show the data based on selected indicator.

In the second tab, the user can select the driver of inequity in the dropdown and then select the deprived population with the help of indicator charts and map available. The following screen will appear:
For addressing the inequities, the user will need to select the regions with the worst health indicators. To determine this, use the map on the right and toggle with the “analysis by” function above the map to select various indicators by demographic parameters, epidemiological parameters, and theme.

As the above step is carried out, the map will change to indicate the areas with the lowest and highest values for that particular indicator. If “Under-five mortality rate IGME” is chosen, the map will show these percentages accordingly:

In this step, it is possible to prioritize the target population by the disaggregation types that are available in the associated dataset. For most of the pre-uploaded datasets, data is available by Regions, Wealth and Residence. Depending on the country contexts, additional datasets if available by sex, by ethnicity, by castes can allow additional equity analysis by these dimensions.

Further, select the regions for the target population with the highest rates of Under-five mortality IGME. This is done by either selecting the regions on the map directly or selecting/deselecting the region names under “select target population”. One has the option to sort areas and the respective data values. As the areas are selected, the
boundaries of map (here for United Republic of Tanzania) will start getting highlighted. The zoom icon will help in zooming in and zooming out.

EQUIST allows simultaneous analysis by the absolute burden of disease. The ‘donuts’ on the right side, show:
- Proportion of total burden
- Proportion of equity frontier
- Proportion of operational frontier

All the above three donut visuals show the share of targeted population as compared to the total values for the country.

Once the target population selection has been saved, user can further refine some key data points using the “Edit targeted population data” button. On clicking the button following grid will appear, that shows the weighted average values for each indicator, this value is calculated by system based on selection of target population. may be optionally used to identify a specific target group within the identified disadvantaged population: (e.g. a district within a province or region). After this is clicked, the following screen will appear:

Default values are shown for the selected disadvantaged group and the revised value for targeted population may be updated under current values. At every step, it is necessary to ‘Save’ before proceeding to the next step. The ‘Save’ button flashes to remind the user.
Click ‘save’ after the target population selection has been done. This will then open Step 2 followed by step 3 i.e. Epidemiological priorities and interventions respectively. The save button will blink to alert the user:

5.1.2 Epidemiological priorities
This step can be done only step 1 has been completed and the scenario has been saved. At this step, the user will identify the epidemiological priorities for the scenario, taking into consideration the overall objective as well as the specific country’s context. The choice of epidemiological priorities will depend on the valid options existing for tackling the specific problem and the programme managers having the knowledge that such interventions are possible to be initiated as part of the health programme during the period. One needs to identify what the ultimate objective and/or area of interest is, it overall child mortality reduction and tackling of
nutrition problems? Is the specific objective focused on neonatal mortality reduction or maternal health? Is the programme managers specifically looking at a thematic area of the immunization programme only? The earlier process of situation analysis helps identify the areas that need focus and attention. For example, if diarrhoea and pneumonia are contributing to a large portion of under-five deaths, subsequent steps will be look at interventions and bottlenecks that are around these problems.

First select “epidemiological priorities” from the navigation menu on the left.

The following screen will show in the scenario analysis window:

Causes of mortality are broken down into categories as listed at the top: neonatal causes, post neonatal & child mortality causes, child nutrition, and maternal mortality.

These are further divided into Total burden, equity frontier and operational frontier. Except for child nutrition, number or rate can be selected as units. Associated with each tabs are ‘Epicauses’ For example given below is the screenshot where the causes Asphyxia, Prematurity, and Tetanus have been chosen. Once these epicauses are selected, the relevant portions in the ‘donuts’ will start changing. The selected epicauses are highlighted in dark blue color.
Once the your major causes of mortality that are intended to be addressed are identified, click the ‘save’ button on the left.

5.1.3 Interventions

Next, the priority interventions for the selected epicauses in step 2 will need to be identified. EQUIST includes over 60 interventions. The interventions are grouped into nine “packages” which have further been organized into three service delivery modes: family care practices, preventive services, and curative services.

User can select interventions from this step which will further affect the analysis in the subsequent steps. The choice of interventions will depend on country context, the ability of the health system either at the time of developing the scenario or during the period of the plan has the commitment to implement.

The default analysis will show the effective coverage level at the family care practice. The screen shall look like
Three categories:
- Service Delivery Modes (SDM)
- Package
- Intervention

The interventions come under specified packages and fall under three main SDM’s. By default selected indicator is ‘Under-five mortality’. Further, one can select interventions accordingly. As interventions are selected, they will start appearing in dark blue colour and all the steps following it will not be enabled. The ‘donuts’ on the right will start populating (the concentric circles within expand) for the Equity frontier and Operational. For completing the analysis, the user will have to go to each of the three delivery modes and within the delivery modes, the packages and interventions sequentially and identify all the interventions that are relevant for addressing the epicause that have been included in the previous step.

Note: Remember these steps are interdependent on each other.
Once the major interventions have been identified across each service delivery mode, remember to click on ‘save’ before proceeding to the next step.

5.1.4 Bottleneck

In this Step, the user will identify the priority bottlenecks that the programme will seek to address as part of the scenario. EQUIST will show the levels for each of the five bottlenecks (from i to v below) based on the indicators most relevant for the intervention/package/service delivery mode. The ‘data managers’ for the country, have an opportunity to review the default indicators and where applicable modify the indicators based on the country context and data availability.

To properly conduct this analysis, it is essential to understand what each of the eight terms\(^1\) mean. The first five terms below, include either demand side barriers or supply side bottlenecks. The last three terms below are measures of performance of the health system as a whole as a result of the combined effect on the population of the extent to which the barriers and bottlenecks have been addressed:

- i) Availability of commodities,
- ii) Availability of human resources,
- iii) Geographical accessibility,
- iv) Financial affordability,
- v) Sociocultural acceptability,
- vi) Initial utilization,
- vii) Adequate coverage, and,
- viii) Effective coverage

The bottleneck analysis framework in EQUIST assumes that all of the above eight conditions need to be changed to provide for the health system as a whole to perform effectively. Thus, from a supply perspective (provisioning by the health system) there must be supplies in place, they need to be accessible to the population, and the relevant health staff need to be available and adequately equipped and trained to provide the intervention. Thus, there should not be any bottleneck in providing for the services. From a demand perspective, there should be no barrier that will in any way restrict the utilization of the service. The target population must be aware of the health service or desirable behaviour and be willing and able to seek care when indicated and should not be in any way be hampered either due to cost or due to lack of information/knowledge or due to tradition or custom. Finally, the service must be provided (or health behaviour performed) continuously and repeatedly as required with adequate quality to have the intended impact on the health outcomes of the population. This framework has been employed by UNICEF, the World Bank and others for many years and was originally adapted from a model described by Tanahashi in the *Bulletin of the WHO* in 1978. These determinants are highly inter-related, and the relationships between these are further described below:

The following screen would appear:

---

\(^1\) Definitions of each of these determinants is available in Annex I
In this step all the analysis for bottlenecks will be based on the above three dropdown menu that appear consecutively:

- SDM (family care practices, preventive services, curative services)
- Packages (one of the nine high impact packages)
- Interventions respectively.

The menu of interventions will change depending on the packages identified. And the packages themselves will be based on the service delivery modes chosen. The bottleneck assessment will be done consecutively for each SDM, package and the relevant interventions based on the ‘interventions’ previously identified in Step 3.

One will see five columns, namely

- Determinants,
- Baseline coverage,
- Bottleneck,
- Severity and
- Is priority.

The user will have to check the last column, depending on the visualisation of data in the first four columns. The colour coding in terms of severity is a guide to the user to show the severity of the bottleneck. Ultimately, it is the user who will have to include which of the determinants will be addressed during the course of implementing the programme.

Remember: the system will allow this step to be implemented either at the first level i.e. SDM or at the next level i.e. the package or at the level of intervention. If the analysis is being carried out at the level of SDM, the last three determinants will not be computed and therefore will not be visible while for analysis at the level of package or intervention all the eight determinants will be visible and depending on the data available, the second column will show values.

As noted earlier, EQUIST automatically derives the baseline values of coverage determinants from the indicators validated through the national customization processes. Users will have the ability to either accept the system quantified values or adjust the assessment based on a stakeholders discussion or the specific contexts for which the scenarios are being developed. EQUIST will automatically calculate the severity of bottlenecks based on the indicators used to measure the level of compliance with each condition for utilization.
The circles on column 4, show various colours to indicate the severity of that particular bottleneck. Here symbolizes the least severity while shows highest severity. One can also prioritize these by clicking priority.

The button besides determinant allows the user to view or associate indicators which relate to that particular determinant as shown.

As can be seen, either a single or multiple indicators may be associated with quantification of any single determinant. In the illustration above, 2 indicators are associated with the ‘Adequate coverage’ for ‘Improved sanitation’ (intervention) with their respective sources and coverage value. By default, EQUIST recognises one of them as a ‘Primary indicator’ and the textbox below will populate with that indicator name and its source and coverage value. User can while carrying out the analysis in Step 4, change the selections, source names, indicator names and coverage values for that updated and verified data. It will reflect background list, so will affect the Severity. using icon
Once this part of the bottlenecks has been completed, it is recommended to collapse this section and move to the next section on ‘Enabling environment’.

The “proposed” bottleneck reduction value is calculated taking into account these factors. The enabling environment situation of the country – has been defined through 4 broad areas. These are:
- Social Norms
- Policy and legislation
- Budget and expenditure
- Management and coordination

This enabling environment factor acts as a “discount factor”; understanding the “operational frontier” reflects the plausible bottleneck reduction in optimal circumstances (i.e. optimal enabling environment). If the enabling environment for this specific context is not optimal, it would be expected to have a lower bottleneck reduction.

EQUIST generates the enabling environment (EE) score, which is an average of the 4 areas noted above and the related indicators.

The EE score as shown on the bottom line is an average of the 4 indicators listed above. The scoring helps users to determine the extent to which the bottleneck reduction value needs to be changed.
As one increases or decreases the bottleneck reduction values in Step 4, the coverage values of the target population will adjust accordingly. The coverage determinants follow a hierarchical relationship, through which the improvements in effective coverage result as a function of the cumulative reduction of the bottlenecks.

After the bottleneck analysis adjustments have been completed, the results of the Step 4 will need to be saved. The ‘save’ button will blink and thus prompt the user to save before proceeding to the next step.

Once the baseline values of coverage determinants and the sources have been adjusted, the user will proceed with selecting the priority bottlenecks to be addressed – based on the relative severity of each of the bottlenecks as shown in the ‘traffic light’ monitor, as well as the feasibility in the given context. On completion of the step 4 and saving the work so far, the user will proceed with the next Step to determine the causes of the bottlenecks through a ‘Why-Why-Why’ process to determine the root causes.

### 5.1.5 Causes

In this step known as Step 5, the causes of bottlenecks mentioned in previous step are further analyzed. The following screen will appear:

The causes under each ‘determinant’ can be collapsed by clicking on them and the resultant screenshot is shown below:
The bottlenecks which were defined in the previous step appear in this section. The colour legend depicts the severity of those bottlenecks.

Sign indicates that it was prioritized for action by the user during the previous step. Under these bottlenecks are causes. User will have to select the most appropriate cause out of the options that appear. Usually this exercise is best done through a stakeholder discussion involving the actual programme implementors who are familiar with that function and can describe the problems associated in the context at which the programmes are implemented. For each of the bottleneck, an additional ‘user defined’ (not given in the menu of options) cause can be added during this step.

Description of various causes to the identified bottleneck. As the user selects the most relevant cause, they are highlighted.

Once the user has selected one or more causes, EQUIST will prompt users in the next step a generic strategy to address the particular cause. It is important to select only those cause(s) that the users agree are most relevant to the country context. Further, users can elaborate the cause with additional comments in the space provided.
An important feature of the bottleneck assessment is the ability to manipulate the bottleneck reduction value, to see how the coverage of the target population is affected.

Next section here is the **Enabling environment** for these causes.

![EQUIST User Guide](image)

Here causes, whether direct or indirect, a collaborative comment for these causes can be executed.

After completing all selections the screen will appear as follows:

![EQUIST User Guide](image)

Users can select causes which have direct impact on those bottlenecks and are severe in nature.

The Hamburger icon Will show a collaborative coverage target population with their values in step 5 and step 6.
Once this step has been completed, click on the save button and proceed to Step 6 of selecting strategies.

5.1.6 Strategies

The next step is to select strategies. All the health system strategies are listed here.
On collapsing, one can see all the strategies relevant to SDM/package/intervention combination.

These are predefined strategies. For evaluation strategies of the previously selected bottlenecks, their causes will be selected here.

The system has been configured to allow users to add ‘other strategy’ which has not been already defined in the system. For example, by clicking on ‘Other Financial strategy’ the strategy will be selected and can be updated as well.
The system will show a band to represent the range of effect size based on literature. The effect size for selected strategies can be further adjusted by the user using this slider.

The edit button for viewing evidence base will open a screen.

It will give a breakup of the effect size for each determinant accordingly. One can update the values which will reflect the values in background list.

Next section in strategies is identifying Enabling environment for the strategies. Similar to what was explained in the previous step ‘causes’.
User will describe challenges identified in those steps for the causes mentioned and enabling environment strategies by filling up the text area. Once the user has completed identifying all the strategies that will be implemented in the proposed programme (scenario), click on save button to save the analytical work so far and proceed to Step 7 on calculating the impact and determining cost comparisons using global defaults.

### 5.1.7 Impact & cost

The final step in the 7 Steps scenario analysis is to estimate the impact in terms of lives saved or stunting averted. This is done by LiST (Lives Saved Tool), which is closely embedded in EQUIST. In this exercise, EQUIST takes the change in effective coverage of each intervention resulting from the scenario that the user has created following Step 1 to 6 so far and runs it through LiST to estimate the lives that can be saved or the stunting that can be averted.

The country administrator has the permissions to review the global cost parameters and adjust various elements that are used in determining the costs based on national norms and local costs.

First, click on Impact & cost from the left menu.
Now click on Estimate impact button.

Please allow a few minutes for the LiST execution process. The following screen below will appear:

The screen will take a few minutes to conduct sequentially the following steps:
1. LiST input file is generated
2. LiST run executed
3. LiST output processed
4. LiST chart generated

Based on LiST results, EQUIST will generate charts showing the deaths which could have been averted based upon the scenario analysis conducted above. The output will have three tabs:
- Target coverage
- Impact
- Cost

Will sum up the analysis we did.

**Target coverage**: This tab will consist of three radio buttons. Target coverage by Determinants, Interventions or By LiST classification.
• **By determinants:** Total target coverage for each determinant will be calculated after successful list run. Showing Baseline coverage and Target coverage. One can enter the target coverage in the textbox.

• **By intervention:** Shows baseline and target coverage values of determinants for the selected SDM or Package or Intervention

**Impact:** Charts will be generated based on analysis from step 1 to step 6.

It is also possible to analyze the impact & cost by Impact level indicators:
1) Under-five mortality
2) Neonatal mortality
3) Stunting (12-23 Mo)
4) Maternal mortality
The default analysis will show the following chart:

In the visualization, the expected impact of the specific scenario will be compared against:

- The operational frontier for the population groups selected: amenable deaths if the deprived population coverage value(s) was equal to the best performing countries
- The equity frontier: amenable deaths if the deprived population coverage value(s) was equal to the non-deprived population coverage value(s)
- This will be compared to the deaths averted in scenario: the deaths averted based upon the scenario you have built for your target population

**Cost:** Third tab will show charts estimating the cost generations for the analysis we did.
6  Service Desk Requests

A service desk has been configured in Jira for EQUIST logged in users. The purpose of the service desk is to log technical bugs and to help users ask questions and seek answers related to the tool.

To access the service desk, click on “service desk” at the bottom of the EQUIST page:

The following screen will appear:
Users are encouraged to enter in as much information as possible in each of the fields to create a ‘ticket’. For example, the User may enter:

1) The module for which a bug or problem has been encountered
2) The issue type
3) The severity

Also, one can view all issues that have been raised earlier.

Please note, it is also possible to send technical queries and requests to equist@dataforall.org.
Annex I: Key Terms & Definitions

Adequate coverage: continuous use of a service or practice of a behavior

Amenable (or avertable) deaths: deaths in disadvantaged populations due to the fact that these populations have lower coverage of high impact interventions than the least disadvantaged populations in the same country.

Availability of commodities: Essential commodities and inputs required to deliver a service or adopt a practice.

Availability of human resources: Physical access to adequately staffed health services (either at static facilities or mobile services)

Bottleneck: A constraint or barrier affecting a coverage determinant, which in turn constrains the delivery or uptake of health interventions.

Bottleneck analysis: a systematic approach to assess which bottlenecks are constraining the coverage of health interventions, and to identify their causes and select operational strategies to address these bottlenecks. Often this analysis is aided by comparing the coverage determinants for health interventions.

Bottleneck severity: relative importance of any given bottleneck as a constraining factor of effective coverage. In EQUIST, the severity of a bottleneck is measured as the relative (%) drop between two consecutive coverage determinants.

Continuity bottleneck: dropout, loss to follow-up, under utilization

Coverage determinants: A set of interdependent conditions necessary to achieve effective coverage of an intervention in a target population. Coverage determinants are used to conduct a bottleneck analysis. Determinants relate to supply, demand and quality of care.

Curative services: One of the service delivery modes – interventions that are only provided when a patient is sick and requires the patient to actively seek care, delivered at primary and/or referral health facilities.

Disadvantaged population: The identified population with the least coverage of interventions and access to resources, below a given threshold:

Early childhood DALY (ECDALY): Years of survival from birth through a child’s fifth birthday without being disabled by diseases or malnutrition.

Effective Coverage: is a measure of health system performance that is intended to combine three aspects of health care service delivery into a single measure: need which refers to the individual/population in need of a particular service, use often referred to in the literature as ‘utilization’, (meaning availability and access), and quality which refers to the actual health benefit experienced from the service.

Enabling environment: the broader environment that influences the supply of and demand for health services, including health policy and finance, management, and social norms. These factors generally cannot be quantified. In EQUIST, the presence of
negative enabling environment conditions is assumed to limit the effectiveness of solutions to bottlenecks.

**Equity frontier:** the most disadvantaged quintiles consisting of the potential future change in their effective coverage and early childhood disability adjusted life years (ECDALYs), if they achieve the baseline effective coverage of the richest quintiles.

**Excess deaths:** The deaths occurring in disadvantaged populations that are due to the lower effective coverage of interventions compared to the least disadvantaged population in the country. In other words, the number of lives that could be saved by bringing the levels of intervention coverage in the disadvantaged populations to the same levels as the least disadvantaged in a given country. It is considered “excess” as these deaths could in principle be prevented by raising levels of coverage to levels that have been achieved already by some populations in the country. Another way of thinking about this is the price, in lives, of health inequities in a country.

**Family care practices:** One of the service delivery modes – interventions delivered at the level of the household or community, by individuals themselves or through community health workers and health extension workers

**Financial affordability:** target population cannot afford the intervention.

**Geographic access:** A problem of infrastructure, personnel, or both

**Initial utilization:** the quantification of the extent to which a service is utilized when the service is made available to the target population.

**Intervention:** A health service or healthy behavior with a proven positive impact on health. In EQUIST, interventions are selected based on proven cost-effectiveness for maternal, newborn, child and adolescent health in developing and middle-income countries specifically.

**Intervention package:** Groupings of health interventions according to the type of service, target population and disease or condition they address. There are 9 intervention packages associated with EQUIST: neonatal & infant care, immunization plus, environmental safety, antenatal care, IMNCI, delivery by a skilled professional, water/sanitation/hygiene (WASH), EMONC, and family planning.

**Least disadvantaged population:** The population with the most access to / highest coverage of the intervention.

**Operational frontier:** for the most disadvantaged quintiles consisting of the potential future changes in their effective coverage and early childhood disability adjusted life years (ECDALYs), if their bottlenecks are reduced with the same proportion, as observed in the best-performing countries

**Premature mortality:** children should live to at least their fifth birthday.

**Preventive services:** One of the service delivery modes – preventive interventions that are delivered on a set schedule through primary care facilities and/or outreach services.
Scenario: in EQUIST, a hypothetical set of policy decisions (prioritization of populations, interventions and strategies) to improve the health system, which is modeled and compared with other scenarios to inform evidence-based decisions and the development of real-world health strategies.

Service delivery mode: One of three levels of the health system: 1) Family care practices—interventions delivered at the level of the household or community, by individuals themselves or through community health workers and health extension workers. 2) Preventive services—preventive interventions that are delivered on a set schedule through primary care facilities and/or outreach services. 3) Curative services—interventions that are only provided when a patient is sick and require the patient to actively seek care; delivered at primary and/or referral health facilities.

Sociocultural acceptability: the intervention is not desirable, or the target population is not aware of it

Strategy: a way of resolving one or more of the underlying causes of a bottleneck. For example: a strategy to address a bottleneck in the availability of commodities is to purchase buffer stocks of key medicines.
Annex II: List of Intervention Packages & Interventions within each Service Delivery Mode

FAMILY CARE PRACTICES

WASH (intervention package) & associated interventions:
- Hand washing with soap
- Improved sanitation - Utilization of latrines or toilets
- Hygienic disposal of children's stools
- Use of water from improved sources
- Water connection in the home

Environmental safety (intervention package) & associated interventions:
- ITN/IRS – ownership of Long Lasting Insecticide Treated Bednets (ITN) or household protected by indoor residual spraying (IRS)
- Accident prevention for children

Neonatal & infant feeding & care (intervention package) & associated interventions:
- Exclusive breastfeeding (0-5 months)
- Any breastfeeding (12-23 months)
- Any breastfeeding (6-11 months)
- Complementary feeding—supplementation and education
- Thermal care
- Clean postnatal care practices (cord care)

PREVENTIVE SERVICES

Immunization plus (intervention package) & associated interventions:
- HPV (human papillomavirus) immunization
- BCG immunization (bacillus Calmette-Guerin)
- DPT3 (diphtheria-tetanus-pertussis) immunization
- Hepatitis B immunization
- Hib (haemophilus influenzae type B) immunization
- Measles immunization
- Polio immunization
- Pentavalent vaccination (diphtheria, tetanus, pertussis, hepatitis B and Haemophilus influenzae type b (Hib) immunization).
- Pneumococcal immunization
- Rotavirus immunization
- Vitamin A - supplementation
- Zinc supplementation

Antenatal care (intervention package) & associated interventions:
- Hypertensive disease case management
- Diabetes case management
- FGR – (Fetal growth restriction) detection and management
- Iron folate supplementation
- Calcium supplementation
- IPTp - Pregnant women protected via (intermittent preventive treatment with antimalarial medicines during pregnancy)
- PMTCT - Prevention of mother to child transmission of HIV (including breastfeeding choices)
- Balanced energy supplementation
- Malaria case management
- MgSO4 – (magnesium sulfate) management of pre-eclampsia
- Multiple micronutrient supplementation
- Syphilis detection and treatment
- TT – (Tetanus toxoid) vaccination

**Family planning (intervention package) & associated interventions:**
- Contraceptive use
- Folic acid supplementation/fortification

**CURATIVE SERVICES**

**Integrated Management of Neonatal & Childhood Illness (IMNCI) (intervention package) & associated interventions**
- Treatment of moderate acute malnutrition
- Therapeutic feeding - for severe wasting
- Malaria treatment – Artemisinin-based compounds for malaria
- Antibiotics - for treatment of dysentery
- Oral antibiotics for neonates
- ORS - oral rehydration solution
- Vitamin A - for treatment of measles
- Zinc for diarrhoea management
- Oral antibiotics for Neonatal Infection
- Cotrimoxazole
- Antiretroviral therapy for HIV+ children

**Delivery by a skilled professional (intervention package) & associated interventions:**
- Skilled birth attendant
- Institutional delivery
- Essential care
- Assisted deliveries at home
- Labour and delivery management
- Clean birth practices
- Immediate assessment and stimulation
- AMTSL – (active management of the third stage of labour)
- KMC – (kangaroo mother care)
- Chlorhexidine

**Emergency obstetric and newborn care (EMONC) (intervention package) & associated interventions:**
- Labour and delivery with access to CEMONC facilities
- Neonatal resuscitation
- Labour and delivery with access to BEMONC facilities
- Safe abortion services
- Post abortion care management
- Ectopic pregnancy case management
- Antenatal corticosteroids for pre-term labour
- Antibiotics for pPROM (preterm premature rupture of membranes)
- MgSO4 – (magnesium sulfate) management of eclampsia
- Induction of labour for pregnancies lasting 41+ weeks
- Maternal sepsis case management
- Case management of premature babies
- Full supportive care for premature babies
- Case management of severe neonatal infection
- Full supportive care for sepsis/pneumonia
Annex III: List of Countries and their two recent surveys loaded in EQUIST tool - December 2015

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<th>Countries</th>
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<th>ENDLINE SURVEYS</th>
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2 MBB: http://www.devinfolive.info/mbb/mbbsupport/